NWS Form E-5 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE **MONTHLY REPORT OF HYDROLOGIC CONDITIONS**	**HYDROLOGIC SERVICE AREA:** Pocatello, Idaho (PIH) **REPORT FOR:** **MONTH:** September **YEAR:** 2016
TO: Hydrologic Operations Division, W/OH2 National Weather Service National Oceanic and Atmospheric Administration Silver Spring, Maryland 20910	**SIGNATURE** Corey Loveland Service Hydrologist **DATE:** October 6, 2016
When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts and hydrologic products issued (NWS Instruction 10-924).	

X **An X in this box indicates that *no* flooding has occurred for the month within this hydrologic service area.**

Overview:

September brought the end to the hot/dry summer. A good amount of rain fell across the Hydrologic Service Area (HSA) with mostly two to four inches in the mountainous areas and even more in the Teton Range and central mountains. Across most of the HSA, mostly 200 to 600 percent of normal precipitation fell in the south central plain and 125 to 400 percent of normal in the central mountains. Temperature departures from normal for September show that across the HSA, we ranged near to slightly below normal, mostly negative three to positive one degree F near normal. Mean average temperatures ranged from 44 to 75 degrees F across the HSA. To round-up the water year, all river basins received slightly below normal (low to upper 90 percent) precipitation with the Henrys Fork receiving the lowest at about 85% of normal for the water year.

As far as the short-term 8 to 14 day Climate Prediction Center Outlook is concerned, the forecast of 40 to 50 percent above normal temperatures across the state and a mostly near normal to 33 to 40 percent chance of below normal precipitation across southeastern Idaho. The one-month forecast graphics are found below. For the three-month outlook, the temperature is forecast to be warmer than normal across the West; with a 40 to 60 percent chance of above normal temperatures over Idaho, with increasing chances of warmer temperatures in southeastern Idaho. As for three-month outlook for precipitation, the outlook is for near normal precipitation across most of Idaho.

Of the data available for the month, the station within the HSA reaching the highest 24-hour temperature was the Malta Aviation WBAN station reaching 95°F on the 2nd. The station (non-SNOTEL and non-RAWS) with the lowest recorded temperature was the Stanley COOP station at 19°F on September 10th. The highest recorded 24-hr precipitation (non-SNOTEL) occurred at the Driggs COOP station where 1.92 inches fell on the 24th. The highest recorded precipitation total (non-SNOTEL) occurred at the Preston 0.8 SE CoCoRaHS station where 4.32 total inches was recorded for the month. The Bostetter Ranger Station SNOTEL recorded 5.20 inches of total precipitation for the month. The basins receiving the greatest precipitation were the Little Lost and the Birch-Medicine Lodge basins receiving 264% and 252% of average precipitation respectively for the month of September-based on SNOTEL data.

Reservoirs last month decreased capacity overall by around 4% in the upper Snake River basin system (a decrease of about 161 KAF occurred over the month and is currently sitting at 22% of capacity overall). Compared to last year at this time, it was about 28% of capacity. According to the Natural Resources

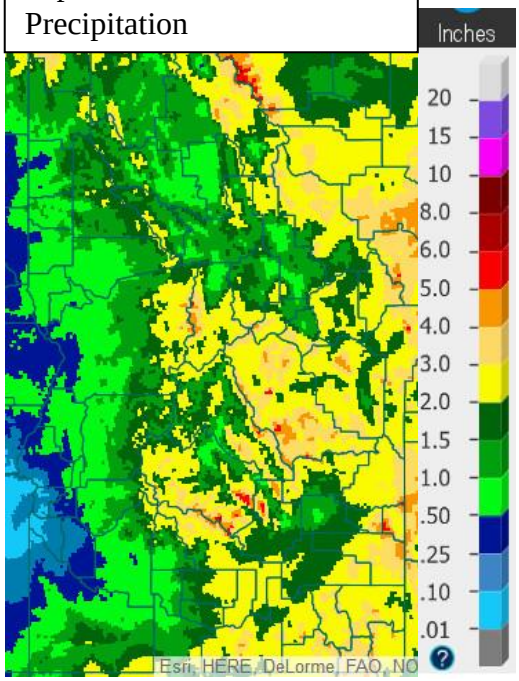
Conservation Service and U.S. Bureau of Reclamation reservoir data, the most notable increase in storage capacity was the Ririe reservoir and Jackson Lake decreasing percent capacity by 22% and 12% respectively. Island Park reservoir gained inflow by 3% of capacity. Mackay reservoir is currently at 173% of average with Palisades at 40%, Island Park at 44% and American Falls reservoir at 42% of average ending the water year.

Current streamflow conditions in eastern Idaho are mostly near to below normal for monthly streamflows for the majority of the unregulated streams (see graphic below).

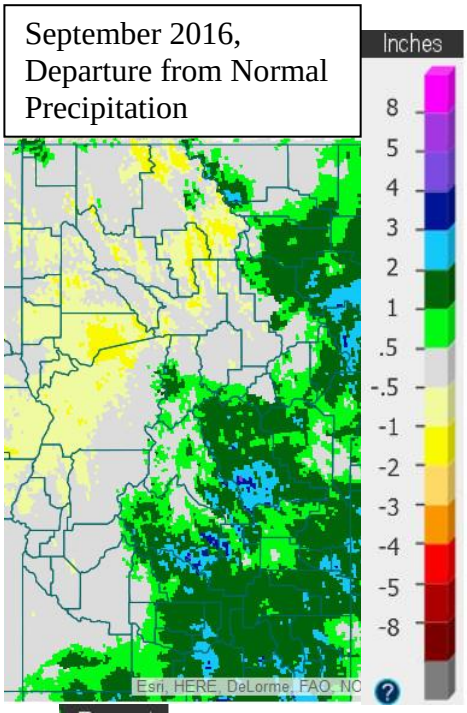
Drought conditions across eastern Idaho have improved in September as reflected on the latest Drought Monitor update where Moderate Drought conditions have lessened in Bonneville and Bingham counties. Currently, about 94 percent of the state is in Abnormally Dry drought status with about 9% of the state is in Moderate Drought. The latest update to the U.S. Seasonal Drought Outlook has shown a persistence of dry conditions in mostly the upper Snake area and a large portion of the HSA.

Precipitation:

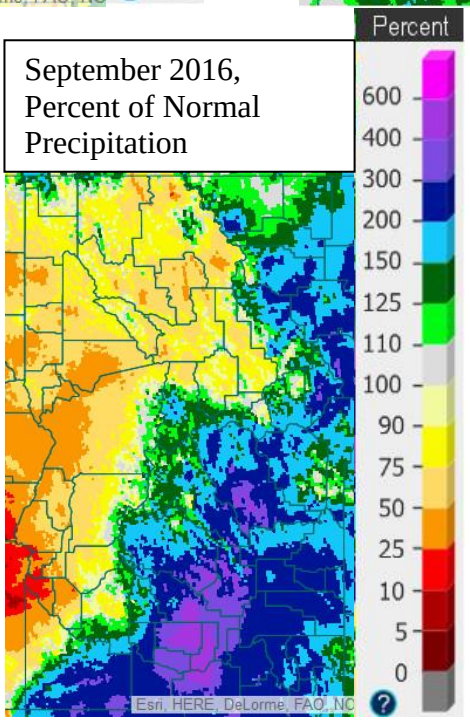
September 2016, Observed Precipitation



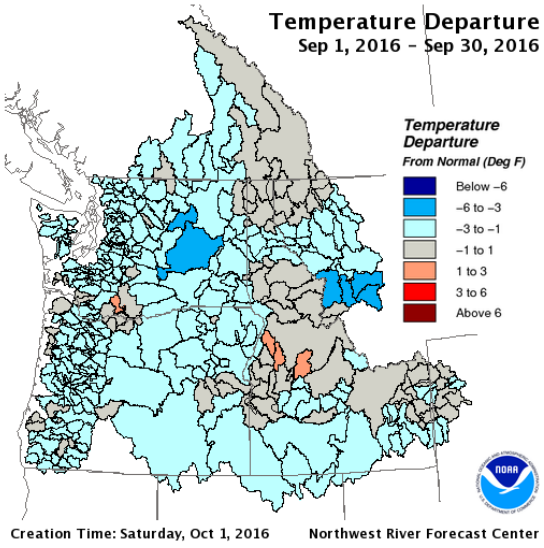
September 2016, Departure from Normal Precipitation



September 2016, Percent of Normal Precipitation



water.weather.gov/precip/#



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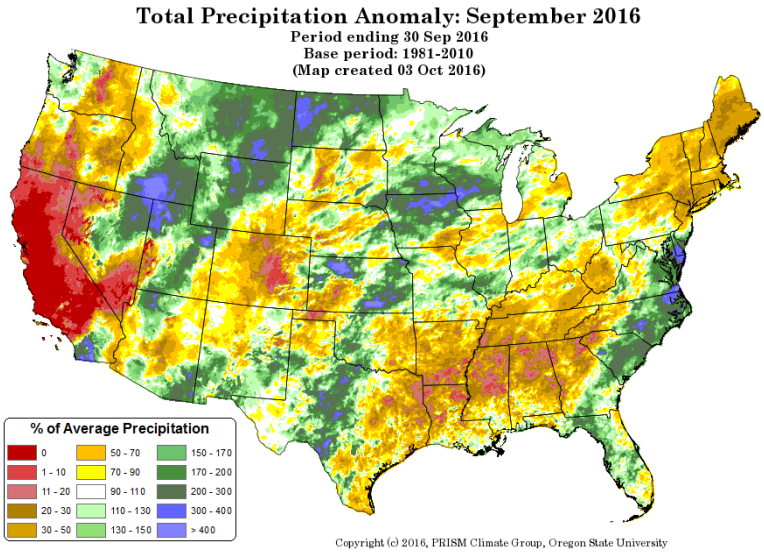
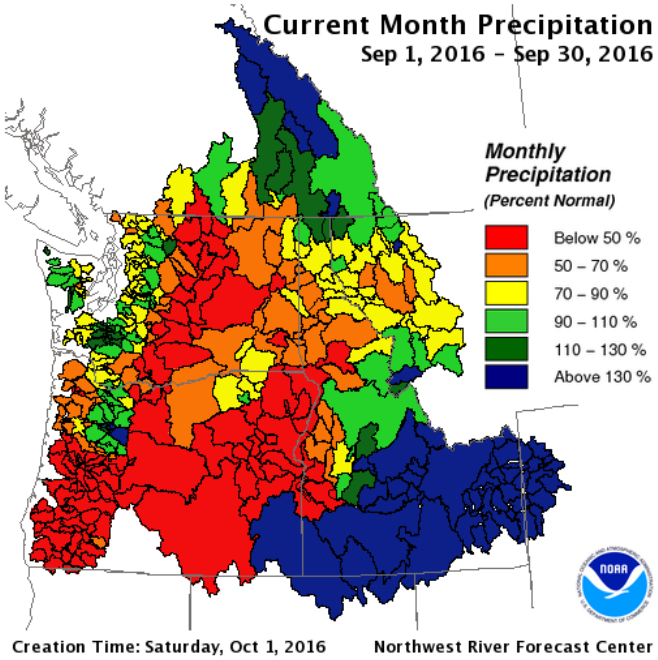


prism.oregonstate.edu/



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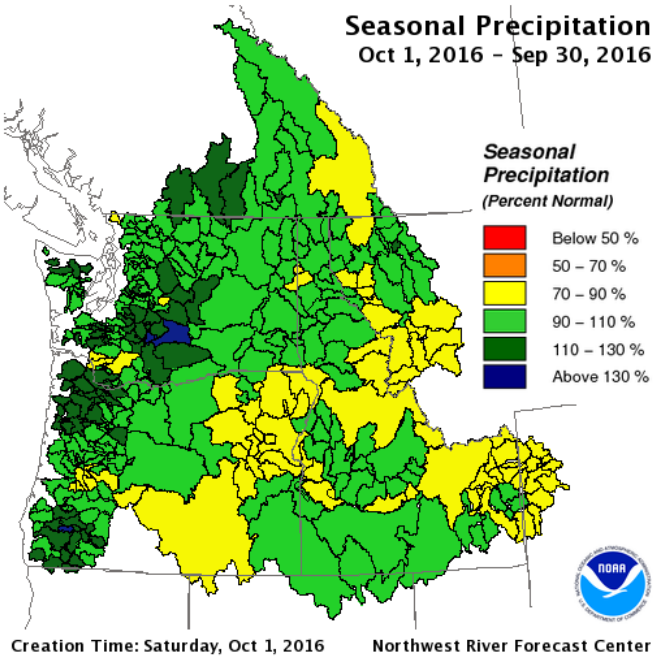
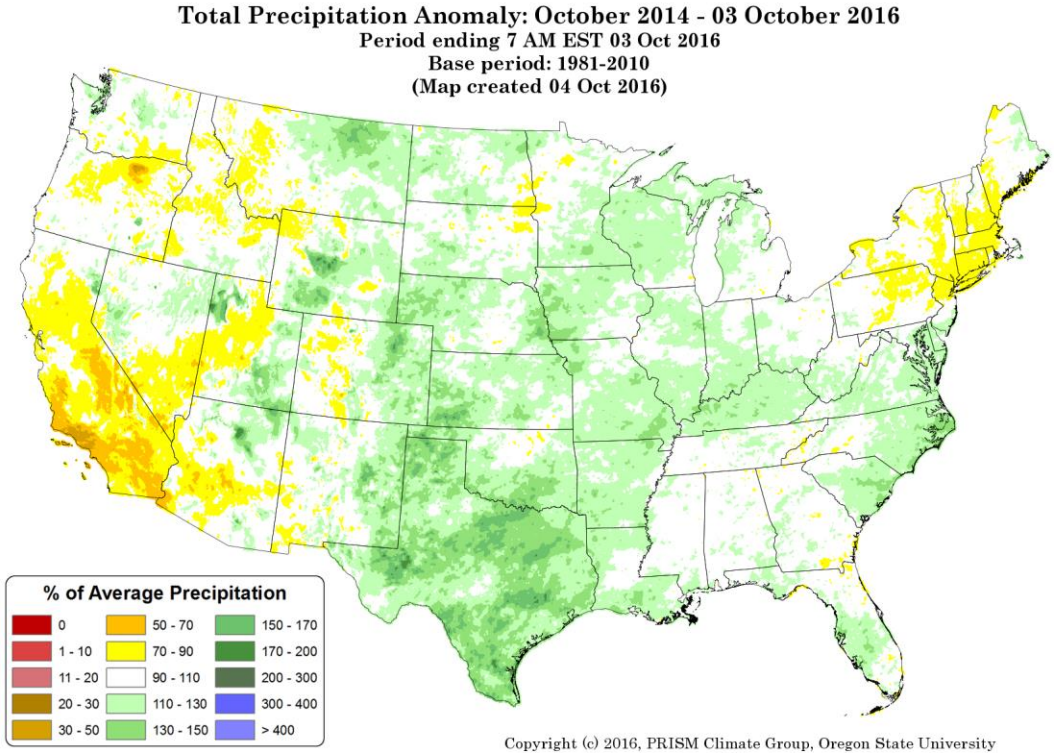


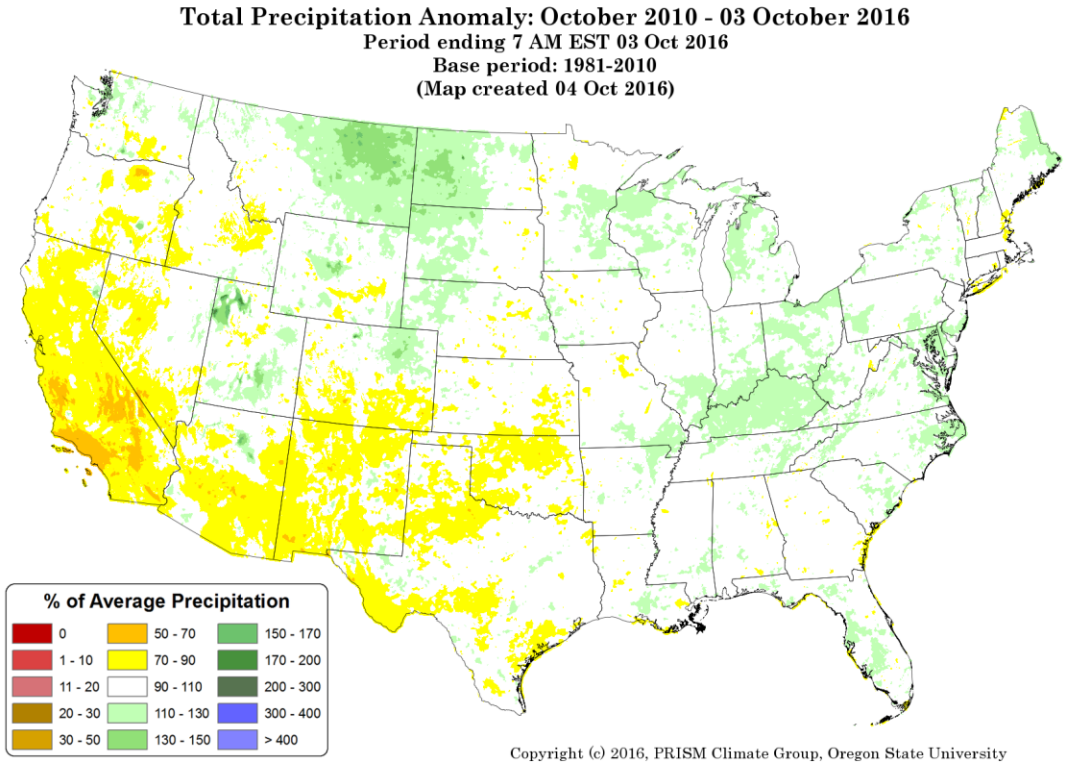
nwrfc.noaa.gov/WAT_RES_wy_summary/20161001/SeasonalMAP_2016Sep30_2016100120.png

****NRCS Westwide SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal and SNOTEL Month to Date Precipitation % of Normal not available this month**

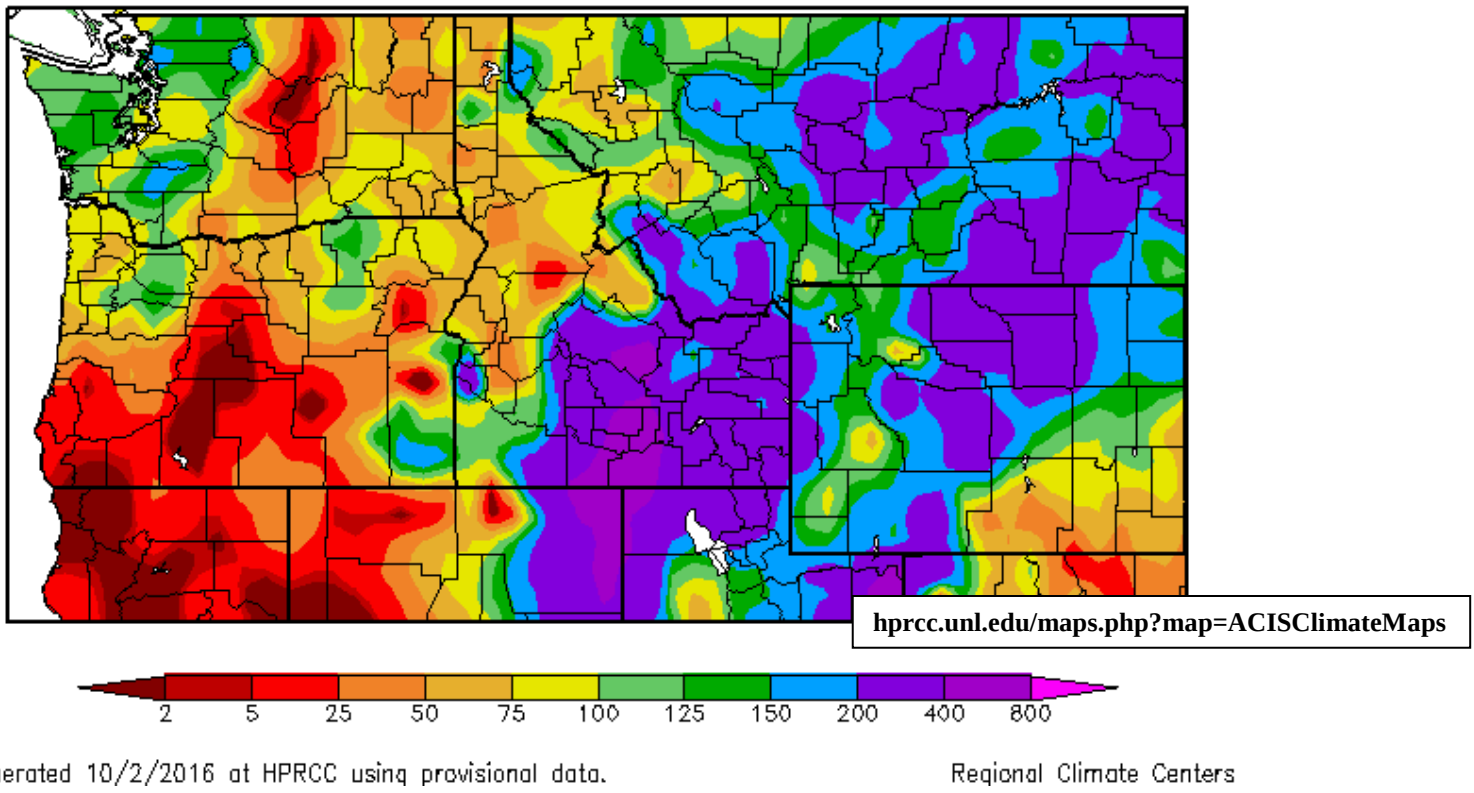
Past 2 Years of Precipitation % of Average:



Past 6 Years of Precipitation % of Average:



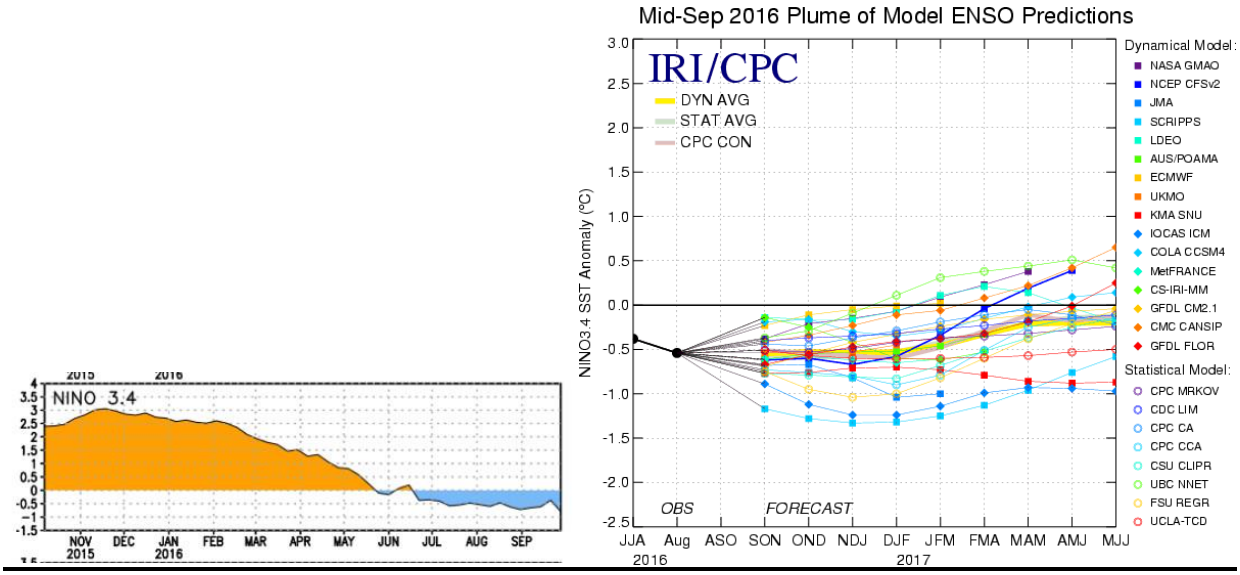
prism.oregonstate.edu/comparisons/drought.php



September brought relief to the prolonged dryness of the summer. Southeastern Idaho received a much needed and decent amount of moisture in the area; on the order of 200 to 800 percent of normal for the region. South central Idaho received the greatest amount of above normal precipitation. Northern UT, WY and central and eastern MT, received some decent rainfall as well. The dry areas for the month were northern Idaho, OR, and eastern WA.

ENSO Update:

Latest Observed SST Departure: Niño 3.4 ~ -0.8 Deg C



cpc.ncep.noaa.gov, iri.columbia.edu/climate/ENSO *and* cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.pdf

CPC Synopsis: ENSO-neutral conditions present. Neutral conditions are slightly favored (55 - 60%) during this fall and winter.

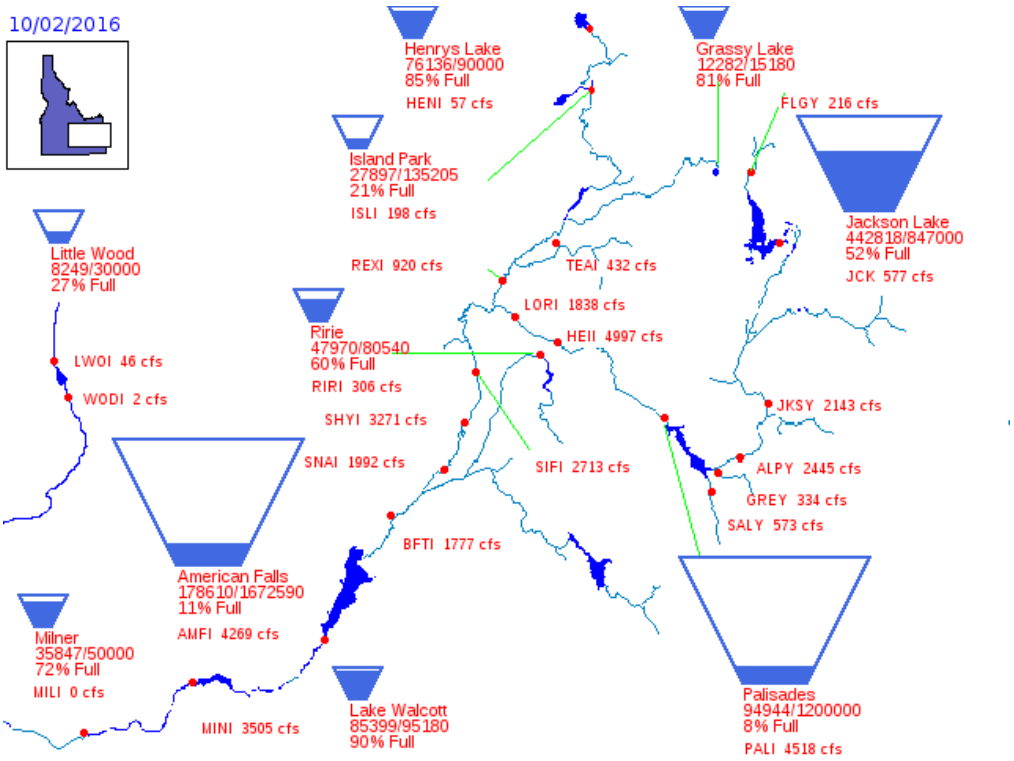
Note: Equatorial sea surface temperature (SSTs) are near or below average in the east-central and eastern equatorial Pacific Ocean. MJO signal continues to be weak. The Pacific Decadal Oscillation (PDO) is currently positive.

Reservoirs:

Reservoir	% Capacity August 31[1]	% Capacity September 30[2]	Percent Change	% of Average[2]	% of Average Last Year[2]
Jackson Lake	64	52	-12	105	132
Palisades	30	21	-9	40	72
Henrys Lake	87	83	-4	99	98
Island Park	17	20	3	44	71
Grassy Lake	80	81	1	109	108
Ririe	83	61	-22	109	93
Blackfoot	56	55	-1	119	95
American Falls	14	11	-3	42	29
Mackay	35	28	-7	173	93
Little Wood	33	27	-6	135	35
Magic	39	29	-10	116	31
Oakley	16	14	-2	68	50
Bear Lake	35	32	-3	70	80
Lake Walcott	100[3]	90[4]	-10	n/a	n/a
Milner	73[3]	72[4]	-1	n/a	n/a

Source: (1) NRCS August 31, 2016; (2) NRCS September 30, 2016.
(3) US Bureau of Reclamation (BOR) September 7, 2016 (4) BOR October 2, 2016

wcc.nrcs.usda.gov/ftpref/support/water/SummaryReports/ID/BRes_10_2016.pdf

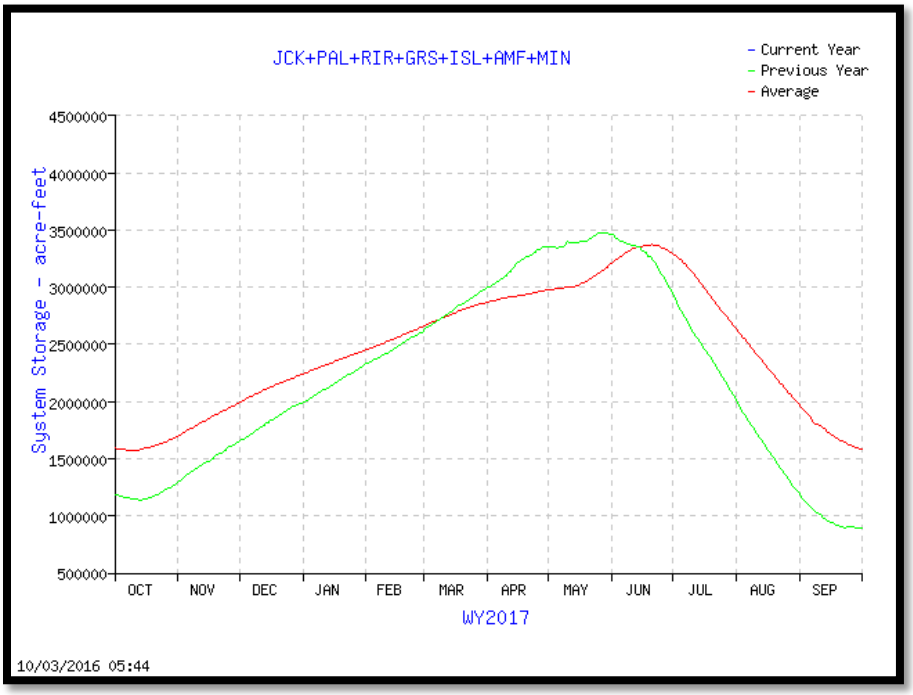


22% of Capacity in Upper Snake River System
(Jackson Lake, Palisades, Grassy Lake, Island Park, Ririe, American Falls & Lake Walcott)

usbr.gov/pn/hydromet/burtea.html

Upper Snake River:
Total Space Available: 3,155,776 AF
Total Storage Capacity: 4,045,695 AF

Graph of Upper Snake River Current Total System Reservoir Storage

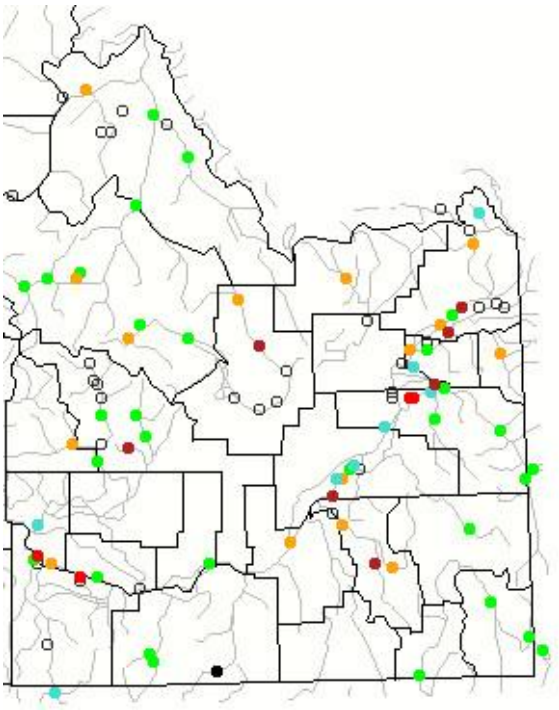


usbr.gov/pn-bin/graphwy2.pl?snasys_af

Streamflow:

Monthly average streamflow compared to historical average streamflow for September 2016.

USGS



waterwatch.usgs.gov/?m=mv01d&r=id&w=map

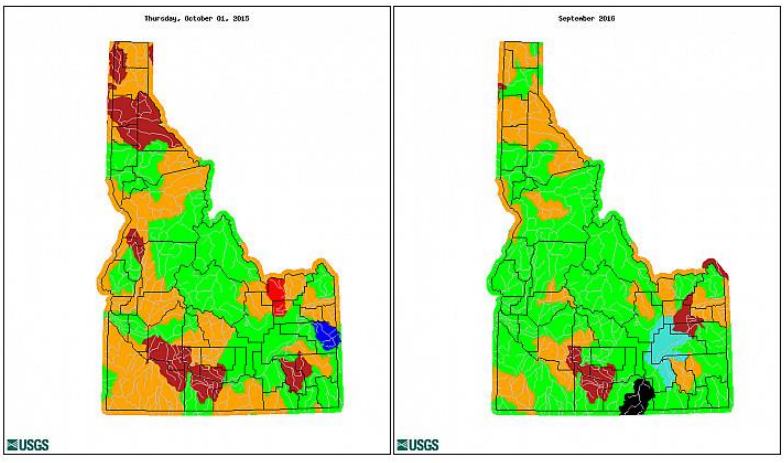
Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Comparison of Streamflow Maps

Geographic area: Idaho | Water resource region: | GO

Map type: Monthly Streamflow (month of year) | Sub type: HUC Streamflow Map

Date (YYYYMM): 201509 Date (YYYYMM): 201609

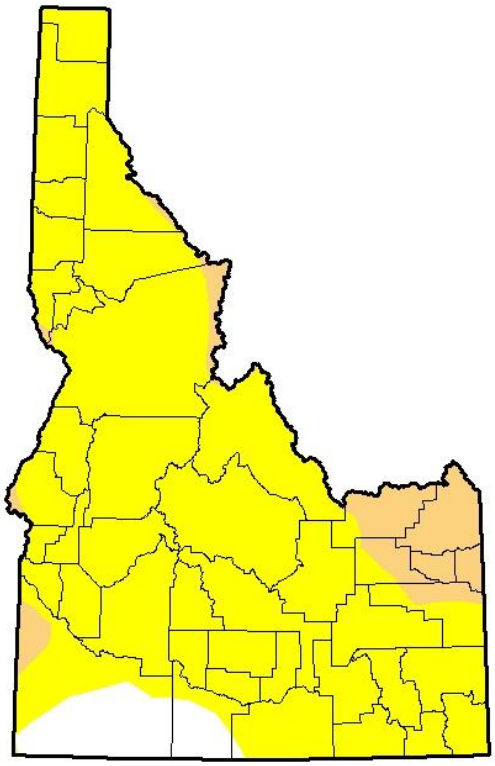


Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	No Data

waterwatch.usgs.gov/index.php

Drought:

U.S. Drought Monitor
Idaho



October 4, 2016
(Released Thursday, Oct. 6, 2016)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	6.14	93.86	8.89	0.00	0.00	0.00
Last Week 9/27/2016	6.14	93.86	8.89	0.00	0.00	0.00
3 Months Ago 7/5/2016	43.21	56.79	0.30	0.00	0.00	0.00
Start of Calendar Year 12/29/2015	10.98	89.02	64.05	24.35	1.18	0.00
Start of Water Year 9/27/2016	6.14	93.86	8.89	0.00	0.00	0.00
One Year Ago 10/6/2015	8.51	91.49	82.14	49.19	28.49	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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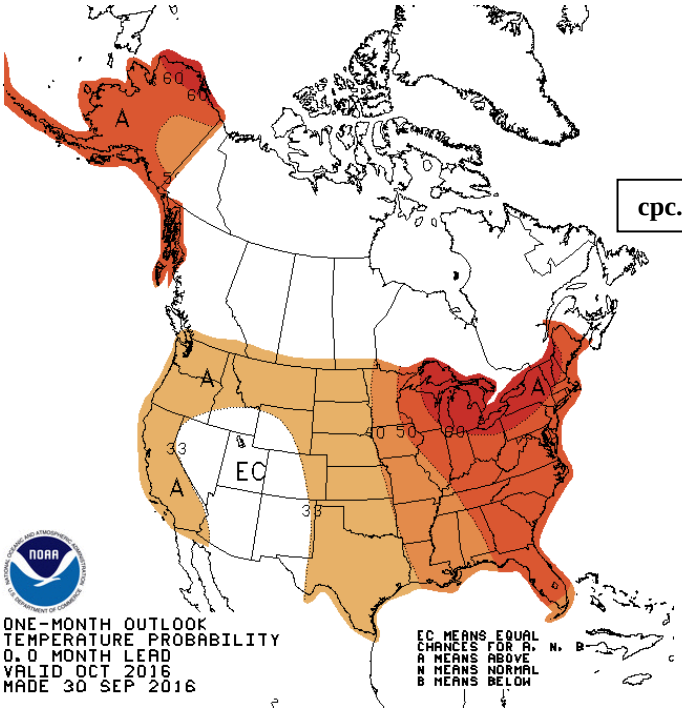
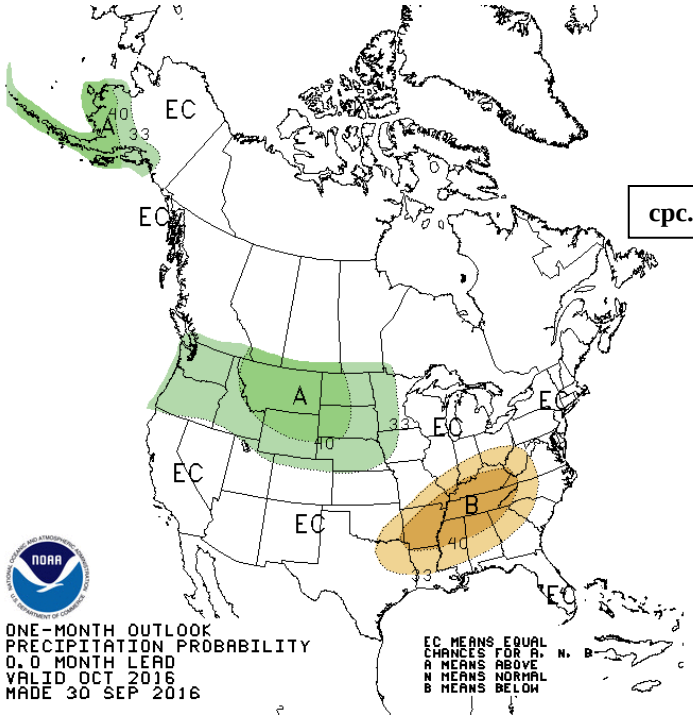
National Drought Mitigation Center

http://droughtmonitor.unl.edu/



cpc.ncep.noaa.gov/products/predictions/30day/off15_temp.gif



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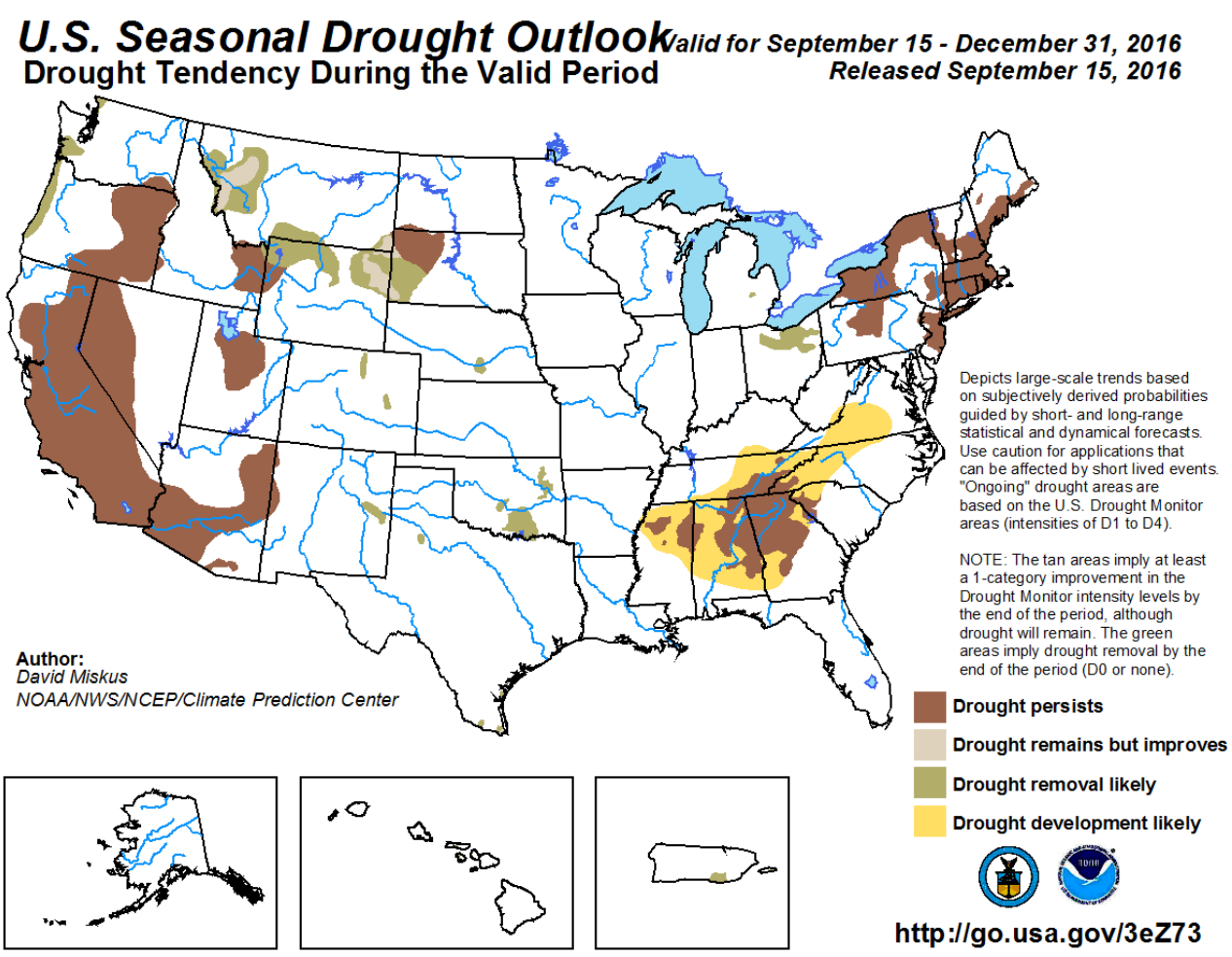

cpc.ncep.noaa.gov/products/expert_assessment/season_drought.png

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PIH Mets/HMT (pih.ops)

End

cbl